## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

- 1. (previously presented) A polymer comprising at least 50 mol% of one or more C3 to C40 olefins where the polymers has:
  - a) a Dot T-Peel of 1 Newton or more on Kraft paper;
  - b) an Mw of 10,000 to 100,000; and
  - a branching index (g') of 0.4 0.98 measured at the Mz of the polymer when the polymer has an Mw of 10,000 to 60,000, or a branching index (g') of 0.4 0.95 measured at the Mz of the polymer when the polymer has an Mw of 10,000 to 100,000;
- 2. (previously presented) The polymer of claim 1 wherein the polymer has:
  - a) a Dot T-Peel of 1 Newton or more on Kraft paper;
  - b) a branching index (g') of 0.4 0.98 measured at the Mz of the polymer;
  - c) a Mw of 10,000 to 60,000; and
  - d) a heat of fusion of 1 to 50 J/g.
- 3. (original) The polymer of claim 1 where the polymer is a homopolypropylene or a copolymer of propylene and up to 5 mole% ethylene having:
  - a) an isotactic run length of 1 to 30,
  - b) a percent of r dyad of greater than 20% and
  - c) a heat of fusion of between 1 and 70 J/#.
- 4. (original) The polymer of claim 1 wherein the polymer comprises propylene and less than 15 mole % of ethylene.
- 5. (original) The polymer of claim 1 wherein the polymer has a melt viscosity of 7000 mPa-sec or less at 190°C.

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- 6. (original) The polymer of claim 1 wherein the polymer has a melt viscosity of 5000 mPa•sec or less at 190°C.
- 7. (original) The polymer of claim 1 wherein the polymer has a melt viscosity of between 250 and 6000 mPa-sec at 190°C.
- 8. (original) The polymer of claim 1 wherein the polymer has a melt viscosity of between 500 and 3000 mPa-sec at 190°C.
- 9. (original) The polymer of claim 4 wherein the polymer has a Tg of 0°C or less.
- 10. (original) The polymer of claim 4 wherein the polymer has a Tg of -10°C or less.
- 11. (previously presented) The polymer of claim 1 wherein the polymer has an Mw of 10,000 to 75,000 and a branching index of 0.4 0.6.
- 12. (previously presented) The polymer of claim 1 wherein the polymer has an Mw of 10,000 to 50,000 and a branching index of 0.4 0.7.
- 13. (previously presented) The polymer of claim 1 wherein the polymer has an Mw of 10,000 to 30,000 and a branching index of 0.4 0.98.
- 14. (previously presented) The polymer of claim I wherein the polymer has a branching index (g') of 0.4 0.90 measured at the Mz of the polymer.
- 15. (original) The polymer of claim 1 wherein the SEC graph of the polymer is bi- or multi-modal.
- 16. (original) The polymer of claim 1 wherein the polymer has an amorphous content of at least 50%.
- 17. (original) The polymer of claim 1 wherein the polymer has
  - a) a peak melting point between 60 and 190°C;

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- b) a heat of fusion of 0 to 70 J/g; and
- c) a melt viscosity of 8000 mPa•sec or less at 190°C.
- 18. (original) The polymer of claim 1 wherein the polymer has:
  - a) a Tg of -10°C or less;
  - b) a melt viscosity between 2000 and 6000 mPa•sec;
  - c) a molecular weight distribution (Mw/Mn) of at least 5; and
  - d) a bi- or multi-modal SEC graph of the polymer.
- 19. (original) The polymer of claim 1 wherein the polymer has a crystallinity of at least 5%.
- 20. (original) The polymer of claim 1 wherein the polymer has 20 wt.% or more of hexane room temperature soluble fraction and 50 wt % or less of Soxhlet heptane insolubles.
- 21. (original) The polymer of claim 1 wherein the polymer comprises less than 3.0 mole % ethylene.
- 22. (original) The polymer of claim 1 wherein the polymer comprises less than 1.0 mole % ethylene.
- 23. (original) A composition comprising the polymer of claim 1 and a functionalized wax.
- 24. (original) A composition comprising the polymer of claim 1 and a wax.
- 25. (original) A composition comprising the polymer of claim 1 and a hydrocarbon resin.
- 26. (original) The polymer of claim 1 further comprising diolefin.
- 27. (original) The polymer of claim 26 wherein the diolefin comprises one or more C4 to C40 diolefins.

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- 28. (original) The polymer of claim 26 wherein the diolefin is selected from the group consisting of 1,6-heptadiene, 1,7-octadiene, 1,8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1,12-tridecadiene, 1,13-tetradecadiene, cyclopentadiene, vinylnorbornene, norbornadiene, ethylidene norbornene, divinylbenzene, dicyclopentadiene, polybutadienes having an Mw less than 1000 g/mol, or combinations thereof.
- 29. (original) The polymer of claim 1 wherein the polymer has an Mz/Mn of 2 to 200.
- 30. (original) The polymer of claim 1 wherein the polymer has an Mz of 15,000 to 500,000.
- 31. (original) The polymer of claim 1 wherein the polymer has a SAFT of 50 to 150°C.
- 32. (original) The polymer of claim 1 wherein the polymer has a Shore A hardness of 95 or less.
- 33. (original) The polymer of claim 1 wherein the polymer has a set time of 5 seconds or less.
- 34. (original) The polymer of claim 1 wherein the polymer has an Mw/Mn of 2 to 75.
- 35. (withdrawn) A continuous process to produce a branched olefin polymer comprising:
  - selecting a first catalyst component capable of producing a polymer having an Mw of 100,000 or less and a crystallinity of 5% or less under selected polymerization conditions;
  - 2) selecting a second catalyst component capable of producing polymer having an Mw of 100,000 or less and a crystal inity of 20% or more at the selected polymerization conditions;
  - 3) contacting the catalyst components in the presence of one or more activators with one or more C3 to C40 olefins; and,
  - 4) at a temperature of greater than 100°C
  - 5) at a residence time of 120 minutes or less;
  - 6) wherein the ratio of the first catalyst to the second catalyst is from 1:1 to 50:1;

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- 7) wherein the activity of the catalyst components is at least 50 kilograms of polymer per gram of the catalyst compounds; and wherein at least 80% of the olefins are converted to polymer.
- 36. (withdrawn) The process of claim 35 wherein the olefin comprises propylene.
- 37. (withdrawn) The process of claim 35 wherein the first catalyst component comprises a non-stereospecific metallocene datalyst compound.
- 38. (withdrawn) The process of claim 35 wherein the first catalyst component comprises a stereospecific metallocene catalyst compound.
- 39. (withdrawn) The process of claim 35 wherein the second catalyst component comprises a stereospecific metallocene catalyst compound.
- 40. (withdrawn) The process of claim 35 wherein the first catalyst component comprises one or more of dimethylsilyl(tetramethylcyclopentadienyl)(cyclododecylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopentadienyl)(cyclohexyl-amido) titanium dichloride, dimethylsilyl(tetramethylcyclopentadienyl)(1-adamantylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopentadienyl)(1-butylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopentadienyl)(s-butylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopentadienyl)(n-butylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopentadienyl)(exo-2-norbomylamido) titanium dichloride, dichloride,

diethylsilyl(tetramethylcyclopertadienyl)(cyclododecyl-amido) titanium dichloride, diethylsilyl(tetramethylcyclopertadienyl)(exo-2-norbornylamido) titanium dichloride, diethylsilyl(tetramethylcyclopertadienyl)(cyclohexyl-amido) titanium dichloride, diethylsilyl(tetramethylcyclopertadienyl)(1-adamantylamido) titanium dichloride, methylene(tetramethylcyclopertadienyl)(cyclododecyl-amido) titanium dichloride, methylene(tetramethylcyclopertadienyl)(exo-2-norbornylamido) titanium dichloride, methylene(tetramethylcyclopertadienyl)(cyclodoecyl-amido) titanium dichloride, methylene(tetramethylcyclopertadienyl)(1-adamantylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopertadienyl)(1-adamantylamido) titanium dichloride, dimethylsilyl(tetramethylcyclopertadienyl)(cyclododecylamido) titanium dimethyl,

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dimethylsilyl(tetramethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl,

dimethylsilyl(tetramethylcyclopentadienyl)(cyclohexyl-amido) titanium dimethyl, dimethylsilyl(tetramethylcyclopentadienyl)(1-adamantylamido) titanium dimethyl, dimethylsilyl(2,5-dimethylcyclopentadienyl)(cyclododecylamido) titanium dichloride, dimethylsilyl(2,5-dimethylcyclopentadienyl)(exo-2-norbornylamido) titanium dichloride,

dimethylsilyl(2,5-dimethylcyclopentadienyl)(cyclohexylamido) titanium dichloride, dimethylsilyl(2,5-dimethylcyclopentadienyl)(1-adamantylamido) titanium dichloride, dimethylsilyl(3,4-dimethylcyclopentadienyl)(cyclododecylamido) titanium dichloride, dimethylsilyl(3,4-dimethylcyclopentadienyl)(exo-2-norbornylamido) titanium dichloride,

dimethylsilyl(3,4-dimethylcyclopentadienyl)(cyclohexylamido) titanium dichloride, dimethylsilyl(3,4-dimethylcyclopentadienyl)(1 adamantylamido) titanium dichloride, dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(cyclododecylamido)titanium dichloride,

dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(exo-2-norbornylamido) titanium dichloride, dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(cyclohexylamido) titanium dichloride,

dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(1-adamantylamido) titanium dichloride,

dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(cyclododecylamido)titanium dichloride,

dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(exo-2-norbornylamido) titanium dichloride,

dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(cyclohexylamido) titanium dichloride, dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(1-adamantylamido) titanium dichloride,

dimethylsilyl(2-ethyl-3-hexyl-5-methyl-4-octy cyclopentadienyl)(cyclododecylamido) titanium dichloride,

dimethylsilyl(2-ethyl-3-hexyl-5-methyl-4-octylcyclopentadienyl)(exo-2-norbornylamido) titanium dichlpride,

dimethylsilyl(2-ethyl-3-hexyl-5 methyl-4-octylcyclopentadienyl)(cyclohexylamido) titanium dichloride,

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dimethylsilyl(2-ethyl-3-hexyl-5 methyl-4-octy/cyclopentadienyl)(1-adamantylamido) titanium dichloride,

dimethylsilyl(2-tetrahydroinden vl)(cyclododecylamido) titanium dichloride, dimethylsilyl(2-tetrahydroinden vl)(1-adamantylamido) titanium dichloride, dimethylsilyl(2-tetrahydroinden vl)(1-adamantylamido) titanium dichloride, dimethylsilyl(2-tetrahydroinden vl)(exo-2-norbornylamido) titanium dichloride, dimethylsilyl(tetramethylcyclor entadienyl)(cyclododecylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(cyclohexyl-amido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(1-adamantylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(t-butylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(s-butylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(n-butylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(n-butylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(exò-2-norbornylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(exò-2-norbornylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclor entadienyl)(exò-2-norbornylamido) titanium dimethyl,

diethylsilyl(tetramethylcyclopentadienyl)(cyclododecyl-amido) titanium dimethyl, diethylsilyl(tetramethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl, diethylsilyl(tetramethylcyclopentadienyl)(cyclohexyl-amido) titanium dimethyl, diethylsilyl(tetramethylcyclopentadienyl)(1-adamantylamido) titanium dimethyl, methylene(tetramethylcyclopentadienyl)(cyclododecyl-amido) titanium dimethyl, methylene(tetramethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl, methylene(tetramethylcyclopentadienyl)(cyclohexylamido) titanium dimethyl, methylene(tetramethylcyclopentadienyl)(1-adamantylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclopentadienyl)(cyclododecylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl, dimethylsilyl(tetramethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl,

dimethylsilyl(tetramethylcyclopentadienyl)(cyclohexyl-amido) titanium dimethyl, dimethylsilyl(tetramethylcyclopentadienyl)(1-adamantylamido) titanium dimethyl, dimethylsilyl(2,5-dimethylcyclopentadienyl)(cyclododecylamido) titanium dimethyl, dimethylsilyl(2,5-dimethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl,

dimethylsilyl(2,5-dimethylcyclepentadienyl)(cyclohexylamido) titanium dimethyl, dimethylsilyl(2,5-dimethylcyclepentadienyl)(l-adamantylamido) titanium dimethyl,

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dimethylsilyl(3,4-dimethylcyclopentadienyl)(cyclododecylamido) titanium dimethyl, dimethylsilyl(3,4-dimethylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl, dimethylsilyl(3,4-dimethylcyclopentadienyl)(cyclohexylamido) titanium dimethyl,

dimethylsilyl(3,4-dimethylcyclopentadienyl)(cyclohexylamido) titanium dimethyl, dimethylsilyl(3,4-dimethylcyclopentadienyl)(ladamantylamido) titanium dimethyl, dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(cyclododecylamido)titanium dimethyl,

dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl, dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(cyclohexylamido) titanium dimethyl,

dimethylsilyl(2-ethyl-5-methylcyclopentadienyl)(1-adamantylamido) titanium dimethyl, dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(cyclododecylamido)titanium dimethyl,

dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl,

dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(cyclohexylamido) titanium dimethyl, dimethylsilyl(3-ethyl-4-methylcyclopentadienyl)(1-adamantylamido) titanium dimethyl, dimethylsilyl(2-ethyl-3-hexyl-5-methyl-4-octylcyclopentadienyl)(cyclododecylamido) titanium dimethyl,

dimethylsilyl(2-ethyl-3-hexyl-5 methyl-4-octylcyclopentadienyl)(exo-2-norbornylamido) titanium dimethyl,

dimethylsilyl(2-ethyl-3-hexyl-5 methyl-4-octylcyclopentadienyl)(cyclohexylamido) titanium dimethyl,

dimethylsilyl(2-ethyl-3-hexyl-5 methyl-4-octylcyclopentadienyl)(1-adamantylamido) titanium dimethyl,

dimethylsilyl(2-tetrahydroindenyl)(cyclododecylamido) titanium dimethyl, dimethylsilyl(2-tetrahydroindenyl)(cyclohexylamido) titanium dimethyl, dimethylsilyl(2-tetrahydroindenyl)(1-adamantylamido) titanium dimethyl, and dimethylsilyl(2-tetrahydroindenyl)(exo-2-norbornylamido) titanium dimethyl.

41. (withdrawn) The process of claim 35 wherein the second catalyst component comprises one or more of the racemic versions of:
dimethylsilyl (2-methyl-4-phenylindenyl) zirchnium dichloride,
dimethylsilyl (2-methyl-4-phenylindenyl) zirchnium dimethyl,

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dimethylsilyl (2-methyl-4-pheny inder yl) hafnium dichloride, dimethylsilyl (2-methyl-4-pheny inder yl) hafnium dimethyl, dimethylsilyl bis(indenyl)hafnium dichloride, dimethylsilyl bis(indenyl)ziconium dichloride, dimethylsilyl bis(indenyl)ziconium dichloride, dimethylsilyl bis(indenyl)ziconium dichloride, the racemic isomers of:

dimethylsilanediylbis(2-methylindenyl)metal dichloride;

dimethylsilanediylbis(indenyl)metal dichloride;

dimethylsilanediylbis(indenyl)metal dimethyl;

dimethylsilanediylbis(tetrahydroindenyl)metal dichloride;

dimethylsilanediylbis(tetrahydroindenyl)metal dimethyl;

dimethylsilanediylbis(indenyl)metal dimethyl;

wherein the metal can be chosen from Zr, Hf, or fi.

- 42. (withdrawn) The process of claim 35 wherein the activator comprises an alumoxane.
- 43. (withdrawn) The process of claim 35 wherein the activator comprises an ionizing compound.
- 44. (withdrawn) The process of claim 35 wherein the activator comprises a non-coordinating anion.
- 45. (withdrawn) The process of claim 35 wherein the activator comprises one or more of methylalumoxane,
  trimethylammonium tetraphenylborate,
  tripropylammonium tetraphenylborate,
  tri(n-butyl)ammonium tetraphenylborate,
  tri(t-butyl)ammonium tetraphenylborate,
  N,N-dimethylanilinium tetraphenylborate,
  N,N-diethylanilinium tetraphenylborate,
  N,N-diethylanilinium tetraphenylborate,
  N,N-dimethyl-(2,4,6-trimethylanilinium) tetraphenylborate,

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1/18 pc/L AWAPTURE 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10

trimethylammonium tetrakis(pentafluorophenyl)borate, triethylammonium tetrakis(pentafluorophenyl)borate, tripropylaminonium tetrakis(pentafludrophenyl)horate, tri(n-butyl)ammonium tetrakis(pentafluorophenyl)borate, tri(sec-butyl)ammonium tetrakis(pentafluorophenyl) borate, N,N-dimethylanilinium tetrakis(pentafluorophenyl) borate, N,N-diethylanilinium tetrakis(pentafluorophenyl) borate, N,N-dimethyl-(2,4,6-trimethylanilinium) tetrakis(pentafluorophenyl) borate, trimethylammonium tetrakis-(2, 3, 4, 6-tetrafluorophenylborate, triethylammonium tetrakis-(2,3,4,6-tetrafluorophenyl) borate, tripropylammonium tetrakis-(2,\$,4,6-tetrafluorophenyl) borate, tri(n-butyl)ammonium tetrakis-(2,3,4,6-tetrafluoro-phenyl) borate, dimethyl(t-butyl)ammonium tetlakis-(2,3,4,6-tetrafluorophenyl) borate, N,N-dimethylanilinium tetrakis-(2,3,4,6-tetrafluorophenyl) borate, N,N-diethylanilinium tetrakis-(2,3,4,6-tetrafluorophenyl) borate, and N,N-dimethyl-(2,4,6-trimethylanilinium)tetrakis-(2,3,4,6-tetrafluorophenyl) borate; di-(i-propyl)ammonium tetrakis pentafluorophenyl) borate; dicyclohexylammonium tetrakis(pentafluorophenyl) borate; triphenylphosphonium tetrakis(pentafluorophenyl) borate, tri(o-tolyl)phosphonium tetrakis(pentafluorophenyl) borate; and tri(2,6-dimethylphenyl)phosphohium tetrakis(pentafluorophenyl) borate.

- 46. (withdrawn) The process of claim 35 wherein the first catalyst component is capable of polymerizing macromonomers having reactive termini; and the second component is capable of producing macromonomers having reactive termini.
- 47. (withdrawn) The process of claim 35 wherein the first catalyst component comprises one or more of di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,8-di-t-butylfluorenyl) zirconium dichloride, di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,8-di-t-butylfluorenyl) hafnium dichloride, di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,8-di-t-butylfluorenyl) zirconium dimethyl, di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,8-di-t-butylfluorenyl) hafnium dimethyl, di(p-

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triethylsilylphenyl)methylene(cyclopentadienyl)(3,3,6,6,9,9,12,12-octamethyl-4,4,5,5,8,8,9,9-octahydrodibenzyl[b,h]fluorenyl) zirconium dichloride, di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,3,6,6,9,9,12,12-octamethyl-4,4,5,5,8,8,9,9-octahydrodibenzyl[b,h]fluorenyl) hafnium dichloride, di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,3,6,6,9,9,12,12-octamethyl-4,4,5,5,8,8,9,9-octahydrodibenzyl[b,h]fluorenyl) zirconium dimethyl, di(p-triethylsilylphenyl)methylene(cyclopentadienyl)(3,3,6,6,9,9,12,12-octamethyl-4,4,5,5,8,8,9,9-octahydrodibenzyl[b,h]fluorenyl) hafnium dimethyl, and the meso forms of:

dimethylsilylbis(indenyl) zirconium dichloride, dimethylsilylbis(indenyl) zirconium dimethyl, ethylenebis(indenyl) zirconium dichloride, ethylenebis(indenyl) zirconium dimethyl, dimethylsilylbis(inderlyl) hafnium dichloride, dimethylsilylbis(indenyl) hafnium dimethyl, ethylenebis(indenyl) hafnium dichloride, ethylenebis(indenyl) hafnium dimethyl, dimethylsily bis(tetrahydroindenyl) zirconium dichloride, dimethylsilylbis(tetrahydroinderlyl) zirconium dimethyl, ethylenebis(tetrahydroindenyl) zirconium dichloride, ethylenelis(tetrahydroindenyl) zirconium dimethyl, dimethylsilylbis(tetrahydroindenyl) hafnium dichloride, dimethylsilylbis(tetrahydroind hyl) hafnium dimethyl, ethylenebis(tetrahydroindenyl) hafnium dichloride, ethylenebis(tetral)ydroindenyl) hafnium dimethyl, dimethylsilylbis(2-methylindenyl) zirconium dichloride, dimethylsilylbis(2methylindenyl) zirconium dimethyl, ethylenebis(2-methylindenyl) zirconium dichloride, ethylenebis(2-methylinderlyl) zirconium dimethyl, dimethylsilylbis(2methylindenyl) hafnium dichlor de, dimethylsilylbis(2-methylindenyl) hafnium dimethyl, ethylenebis(2-methylihdenyl) hafnium dichloride, and ethylenebis(2methylindenyl) hafnium dimethyl.

- 48. (withdrawn) The process of claim 35 wherein the monomers comprise propylene and butene.
- 49. (withdrawn) The process of claim 35 further comprising diolefin.
- 50. (withdrawn) The process of claim 49 wherein the diolefin comprises one or more C4 to C40 diolefins.

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- 51. (withdrawn) The process of claim 50 wherein the wherein the diolefin is selected from the group consisting of 1,6 heptadiene, 1,7-octadiene, 1,8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1,12-tridecadiene, 1,13-tetradecadiene, cyclopentadiene, viny norbornene, norbornadiene, ethylidene norbornene, divinylbenzene, dicyclopentadiene, polybutadienes having an Mw less than 1000 g/mol, or combinations thereof.
- 52. (withdrawn) The process of claim 49 further comprising one or more dienes selected from the group consisting of 1,6 heptadiene, 1,7-octadiene, 1,8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1,12-tridecadiene, 1,13-tetradecadiene, cyclopentadiene, viny norbornene, norbornadiene, ethylidene norbornene, divinylbenzene, dicyclopentadiene, polybutadienes having an Mw less than 1000 g/mol, or combinations thereof.
- 53. (withdrawn) The process of claim 35 wherein the reaction zone is a gas phase reactor.
- 54. (withdrawn) The process of claim 35 wherein the reaction zone is a solution phase reactor.
- 55. (withdrawn) The process of claim 35 wherein the reaction zone is a slurry phase reactor.
- 56. (withdrawn) The process of claim 36 wherein the reaction zone is a solution phase reactor.
- 57. (withdrawn) The process of claim the catalysts comprise one or more of the following combinations (where Me equals methyl, Ph equals phenyl, Et equals ethyl, Cp equals cyclopentadienyl, 3,6-di-t-BuFlu equals 3,8-di-tert-butylfluorenyl, 2-Me-4-PhInd equals 2-methyl-4-phenylindenyl, 2-MeInd means 2-methylindenyl, c-C<sub>12</sub>H<sub>23</sub> equals cyclododecyl, Me<sub>4</sub>C<sub>5</sub> tetramethyl cyclopentadienyl, H<sub>4</sub>Ind equals tetrahydroindenyl, and Ind equals indenyl):
  - (1) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-c-C<sub>12</sub>H<sub>22</sub>)TiCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;

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- (2) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-c-C<sub>12</sub>H<sub>23</sub>)Ti Me<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator,
- (2a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-c-C<sub>12</sub>H<sub>21</sub>)TilMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylarilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (3) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-c-C<sub>12</sub>F<sub>21</sub>)TiCl<sub>2</sub> and fac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (4) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-c-C<sub>12</sub>F<sub>12</sub>)TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating phion activator;
- (4a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-c-C<sub>12</sub>H<sub>21</sub>)Ti Me<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (5) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-adamanty) TiCl and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumovane;
- (6) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-adamanty) TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (6a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-adamanty) TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylatilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (7) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-adamanty) TiCle and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (8) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-adamenty) TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;

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- (8a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-adamantyl)TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub>
  activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or
  triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (9) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t-butyl) TiCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (10) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t-butyl) TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (10a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t-butyl TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylarilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (11) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-1-butyl) TiCl and rac-Me<sub>2</sub>Si(2-MeInd) activated with an alumoxane;
- (12) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t-butyl) TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (12a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-t-butyl) TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (13) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-exo-norpornyl)TiCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumovane;
- (14) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-exo-norpornyl)TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (14a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-exo-ndrbornyl)TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMc<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;

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- (15) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-exo-normormy)TiCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumpyane;
- (16) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-exo-horizonty))TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (16a) Me<sub>2</sub>Si(Me<sub>4</sub>C<sub>5</sub>)(N-exo-norborny)TiMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylani inium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (17) (p-Et<sub>3</sub>SiPh)<sub>2</sub>C(Cp)(3,8-d BuFlu)HfCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumovane;
- (18) (p-Et<sub>3</sub>SiPh)<sub>2</sub>C(Cp)(3,8-d BuHlu)HfMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (18a) (p-Et<sub>3</sub>SiPh)<sub>2</sub>C(Cp)(3,8-d<sub>1</sub>-BuFlu)HfMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with NN-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (19) (p-Et<sub>3</sub>SiPh)<sub>2</sub>C(Cp)(3,8-di-BuHlu)HfCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumovane;
- (20) (p-Et<sub>3</sub>SiPh)<sub>2</sub>C(Cp)(3,8-di-Bullu)HfMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (20a) (p-Et<sub>3</sub>SiPh)<sub>2</sub>C(Cp)(3,8-di-Bullu)HfMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylearbonium tetrakis(pentaflourophenyl)boron;
- (21) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrCl<sub>2</sub> and rac-Me<sub>2</sub>Si(H<sub>4</sub>Ind)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;

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- (22) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe and rac-Me<sub>2</sub>Si(H<sub>4</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a noncoordinating anion activator;
- (22a) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe<sub>2</sub> and rac-Me<sub>2</sub>Si(H<sub>4</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N<sub>3</sub>N-dimethylanilinium tetrak's pentaflourophenyl)boron and or triphenylcarbonium tetrak's (pentaflourophenyl)boron;
- (23) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrC 2 and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (24) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (24a) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMes and rac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrak s(pentaflourophenyl)boron;
- (25) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrCl<sub>2</sub> and rac-Me<sub>2</sub>Si(H<sub>4</sub>Ind)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (26) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and nac-Me<sub>2</sub>Si(H<sub>4</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a noncoordinating anion activator;
- (26a) meso-Mc<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and rac-Mc<sub>2</sub>Si(H<sub>4</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (27) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrCl<sub>2</sub> and rac-Mc<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (28) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and ac-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;

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- (28a) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and rac-Me<sub>3</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrak spentaflour phenyl)boron and or triphenylcarbonium tetrak s(pentaflour phenyl)boron;
- (29) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> and rac Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (30) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZnMe<sub>2</sub> and rad Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activate;
- (30a) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZtMe<sub>2</sub> and rac Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilini in tetrakis(tentaflourophenyl)boron and or triphenylcarbonium tetrak s(pentaflourophenyl)boron;
- (31) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZiCl<sub>2</sub> and rac Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (32) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>Zt Me<sub>2</sub> and rac Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (32a) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZtMe<sub>2</sub> and rate Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium terrak s(pental ourophenyl)boron and or triphenylcarbonium tetrak s(pentallourophenyl)boron;
- (33) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrCl<sub>2</sub> and de-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane:
- (34) mcso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrMe<sub>2</sub> and ac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating an in activator;
- (34a) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd); ZrMe<sub>2</sub> and ac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;

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- (35) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrCl<sub>2</sub> and rec-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (36) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrMe<sub>2</sub> and rec-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating union activator;
- (36a) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd)<sub>1</sub>ZrMe<sub>2</sub> and rc-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilin cm tetrakis(jentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (37) meso-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumovane;
- (38) meso-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (38a) meso-Me<sub>2</sub>Si(2-Me-4-Phini)<sub>2</sub>ZrMe<sub>2</sub> and rac-Me<sub>2</sub>Si(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimetrylanilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrak s(pentaflourophenyl)boron;
- (39) meso-CH<sub>2</sub>CH<sub>2</sub>(2-Me-4-1 lind 2ZrCl<sub>2</sub> and rac-CH<sub>2</sub>CH<sub>2</sub>(2-Me-4-PhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumovane;
- (40) meso-CH<sub>2</sub>CH<sub>2</sub>(2-Me-4-1 Ind <sub>2</sub>ZrMer and rac-CH<sub>2</sub>CH<sub>2</sub>(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (40a) meso-CH<sub>2</sub>CH<sub>2</sub>(2-Me-4-PhInd)<sub>2</sub>ZrMet and rac-CH<sub>2</sub>CH<sub>2</sub>(2-Me-4-PhInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylatilinium tetrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (41) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> and ric-CH<sub>2</sub>CH<sub>2</sub>(2-MePhInd)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;

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- (42) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrMe<sub>2</sub> and re-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (42a) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrMs<sub>2</sub> and ric-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilin um tetrakis(rentaflourophenyl)boron and or triphenylcarbonium tetra is(pentaflourophenyl)boron;
- (43) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrCl<sub>2</sub> and rac-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (44) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe and rac-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (44a) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe and rac-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pertaflour) phenyl)boron and or triphenylcarbonium tetrakis(pentaflour) phenyl)boron;
- (45) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrCl<sub>2</sub> and rac-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (46) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and rac-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion active pr;
- (46a) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and rac-Me<sub>3</sub> i(Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pertaflourophenyl)boron and or triphenylcarbonium tetrak s(pentaflourophenyl)boron;
- (47) meso- $CH_2CH_2(Ind)_2ZrC$  and rac- $CH_2(4,7-Me_2Ind)_2ZrCl_2$  (4,7-Me<sub>2</sub>Ind = 4,7-dimethylindenyl) activated with a alumoxane;
- (48) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrMe<sub>1</sub> and rac-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating paion activater;

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- (48a) meso-CH<sub>2</sub>CH<sub>2</sub>(Ind)<sub>2</sub>ZrM= and rac-Cl<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilin in tetrakis(rentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;
- (49) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrCl<sub>2</sub> and rat-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (50) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and ric-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (50a) meso-Me<sub>2</sub>Si(Ind)<sub>2</sub>ZrMe<sub>2</sub> and rac-CH<sub>2</sub> IH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentallourophenyl)boron and or triphenylcarbonium tetrakis(pentallourophenyl)boron;
- (51) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) ZrCl<sub>2</sub> and ric-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrCl<sub>2</sub> (4,7-Me<sub>2</sub>Ind) = 4,7-dimethyling chyl) activated with an alumoxane;
- (52) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd :ZrMe<sub>2</sub> and rac-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating antin activator;
- (52a) meso-CH<sub>2</sub>CH<sub>2</sub>(2-MeInd) 2ZrMe<sub>2</sub> and ac-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with N,N-dimethylanilinium tetrakis(pentaflourophenyl)boron and or triphenylearbonium tetrakis(pentaflourophenyl)boron;
- (53) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZrCl<sub>2</sub> and rac CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrCl<sub>2</sub> activated with an alumoxane;
- (54) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZtMe<sub>2</sub> and rate CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with a non-coordinating anion activator;
- (54a) meso-Me<sub>2</sub>Si(2-MeInd)<sub>2</sub>ZtMe<sub>2</sub> and rate-CH<sub>2</sub>CH<sub>2</sub>(4,7-Me<sub>2</sub>Ind)<sub>2</sub>ZrMe<sub>2</sub> activated with such as N,N-dimethalanilinium etrakis(pentaflourophenyl)boron and or triphenylcarbonium tetrakis(pentaflourophenyl)boron;

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- 58. (previously presented) A composition comprising a homopolymer of propylene and or a copolymer of propylene and one or more of butene, pentene, hexene, octene, nonene, and decene, wherein the copolymer comprises less than 50 mole% ethylene, and wherein the homopolymer or copolymer has a Dot T-Peel of 3 or more Newtons; a viscosity of 8000 mPa•sec or less at 100 °C; branching index (g') of 0.4 0.85 measured at the Mz of the polymer; and an My of 100,000 or less.
- 59. (original) The composition of claim 58 where in the homopolymer or copolymer has an Mz of 20,000-500,000.
- 60. (original) The composition of claim 5 wherein the homopolymer or copolymer has a SAFT of 60 to 130°C.
- 61. (original) The composition of claim 58 wherein the homopolymer or copolymer has a shore hardness of 60 or less.
- 62. (original) The composition of claim 58 wherein the homopolymer or copolymer has a set time of 2 seconds or less.
- 63. (previously presented) The composition of claim 58 wherein the homopolymer or copolymer has a branching index (g') of 0.4 0.80.
- 64. (original) The composition of claim 58 wherein the homopolymer or copolymer has a heat of fusion of 20-59 J/g.
- 65. (previously presented) A composition computing a polymer of propylene, having from 0 to 5 mol% ethylene and from 0 to 40 mol% of a C5 to C12 olefin, and 0 to 10 mol% of a diene where the polymer has:
  - a) a Dot T-Peel of 1 Newton or more; and
  - b) an Mw of 100,000 or less and
  - c) a Mz/Mn of 2-200; and
  - d) an Mw of 100,000 or less and a branching index of 0.4 0.5, or an Mw of 75,000 or less and a branching index of 0.4 0.6, or an Mw of 50,000 or less

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and a branching index of 0.4 - 0.7, or in Mw of 30,000 or less and a branching index of 0.4 - 0.98; and

- d) a peak melting point between 60 and \$90°C, and
- e) a viscosity of 8000 mPassec or less at 190°C; and
- f) a heat of fusion of 70 J/g or less; and
- g) a Shore A Hardness (as measured by STM 2240) of 70 or less; and
- h) A Shear Adhesion Fail perperature p to 150°C; and
- i) a set time of 5 seconds of less; and
- j) an Mw/Mn of 3 to 75; and
- k) an Mz of 20,000 to 500.00; and
- 1) a melt index of 900 dg/min or less.
- 66. (previously presented) The composition of community in the composition has a branching index (g') of 0.4 0.90 measured at the Mz of the polymer.
- 67. (previously presented) The composition of common 1 wherein the composition has a branching index (g') of 0.4 0.85 measured at the Mz of the polymer.
- 68. (previously presented) The composition of claim 1 wherein the composition has a branching index (g') of 0.4 0.80 measured at the Mz of the polymer.
- 69. (previously presented) The composition of c im 1 wherein the composition has a branching index (g') of 0.4 0.75 measured at the Mz of the polymer.
- 70. (previously presented) The composition of column 1 wherein the composition has a branching index (g') of 0.4 0.70 measured at the Mz of the polymer.
- 71. (previously presented) The composition of claim 1 wherein the composition has a branching index (g') of 0.4 0.65 measured at the Mz of the polymer.
- 72. (previously presented) The composition of chim 1 wherein the composition has a branching index (g') of 0.4 0.60 measured at the Mz of the polymer.

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- 73. (previously presented) The composition of claim 1 wherein the composition has a branching index (g') of 0.4 0.55 measured at the Mz of the polymer.
- 74. (previously presented) The composition of claim 1 wherein the composition has a branching index (g') of 0.4 0.50 measured at the Mz of the polymer.
- 75. (withdrawn) A continuous process to prepare an adhesive comprising:
  - 1) combining monomer, so vent, catalyst and activator in a reactor system,
  - 2) withdrawing polymer so ution from the reactor system,
  - 3) removing at least 10% solvent from the polymer solution,
  - 4) quenching the reaction,
  - 5) devolatilizing the polymer, solution to form molten polymer,
  - 6) combining the molten pallmer and one or more additives in a static mixer,
  - 7) removing the polymer combination from the static mixer, and
  - 8) pelletizing or drumming the polymer combination.
- 76. (withdrawn) A continuous process to product a branched olefin polymer comprising:
  - 1) selecting a first catalyst component capable of producing a polymer having an Mw of 80,000 or less and a crystalling of 15% or less under selected polymerization conditions
  - 2) selecting a second catalyst component capable of producing polymer having an Mw of 80,000 or less and a crystal unity of 50% or more at the selected polymerization conditions
  - 3) contacting the catalyst components in the presence of one or more activators with propylene and one or more C4 to C20 olefins, and, optionally one or more C4 to C20 diolefins.
  - 4) at a temperature of greater than 105°
  - 5) at a residence time of 90 thinutes or less;
  - 6) wherein the ratio of the first catalyst to the second catalyst is from 1:1 to 20:1;
  - 7) wherein the activity of the catalyst components is at least 100 kilograms of polymer per gram of the catalyst compounds; and wherein at least 80% of the olefins are converted to polymer.
- 77. (withdrawn) The process of claim 76 wherei

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- a) the olefins comprise propylene and one or more of butene, pentene, hexene, heptene, octene; nonene, decene, dode ene; and
  - b) the temperature is greater than 1/10°C and
  - c) the residence time is 120 minutes or less; and
  - d) the ratio of the first catalyst to the second catalyst is from 1:1 to 1:10.
- 78. (withdrawn) The process of claim 76 wherein the diolefin is selected from the group consisting of 1,6-heptadiene, 1,7-octadiene, 1 8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1 12-tridecadiene, 1,13-tetradecadiene, cyclopentadiene, vinylnorbornene, norbornadiene, ethylidene norbornene, divinylbenzene, dicyclopentadiene, polybutatienes having an Mw less than 1000 g/mol, butadiene, pentadiene, hexadecadiene, hexadecadiene, heptadecadiene, octadecadiene, nonadecadiene, icosadiene, heneicosadiene, docosadiene, tricosadiene, tetracosadiene, pertacosadiene, hexacosadiene, hexacosadiene, heptacosadiene, octacosadiene, nonacosadiene, triacontadiene, cyclopentadiene, vinylnorbornene, norbornadiene, ethylidene porbornene, divinylbenzene, dicyclopentadiene, or combinations thereof.
- 79. (withdrawn) The process of claim 76 wherein the olefin comprises propylene and one or more of butene, pentene, hexere, heptene, octene, nonene, decene, dodecene, 4-methyl-pentene-1, 3-methyl pentene-1, and 3 5,5-trimethyl-hexene-1.
- 80. (withdrawn) A continuous process to make an adhesive comprising
  - 1) selecting a first catalyst component cribable of producing a polymer having an Mw of 100,000 or less and a crystallinity of 20% or less under selected polymerization conditions.
  - 2) selecting a second catalyst component capable of producing polymer having an Mw of 100,000 or less and a crystallinity of 40% or more at the selected polymerization conditions;
  - ontacting, in a solvent and in a reaction zone under the selected polymerization conditions, the catalyst components in the presence of one or more activators with one or more C3 o C40 olefins, and, optionally one or more diolefins:

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FAX NO. 281 834 1231 Attorney Docket No. 2002B 140/2 at a temperature of greater than 100°C 4) at a residence time of 120 minutes or less; 5) wherein the ratio of the tint catalyst to the second catalyst is from 1:1 to 50:1; 6) wherein the activity of the catalyst components is at least 50 kilograms of 7) polymer per gram of the catalyst compounds; and wherein at least 80% of the olefins are converted to polymer; withdrawing polymer solution from the reaction zone; 8) 9) removing at least 10% solvent from the polymer solution; 10) quenching the reaction; 11) devolatilizing the polymer solution to form molten polymer; 12) combining the molten polymer and one or more additives in a static mixer; 13) removing the polymer equiplination from the static mixer; and 14) pelletizing or drumming the polymer opmbination. (previously presented) A polymericomprising one or more C3 to C40 olefins, optionally one or more diolefin and less that I mole % of ethylene where the polymers has: a) a Dot T-Peel of 1 Newton or more; and a branching index (g') of 0.4 - 0.95 masured at the Mz of the polymer; and b) an Mw of 100,000 or less and ! c) wherein the polymer has at least 2 moly (CH<sub>2</sub>)<sub>2</sub> unit units. (original) The polymer of claim \$1 wherein the polymer has at least 6 mol% (CH<sub>2</sub>)<sub>2</sub> units. (original) The polymer of claim | wherein the polymer has at least 8 mol% (CH<sub>2</sub>)<sub>2</sub> units. (original) The polymer of claim 1 wherein the polymer has at least 10 mol% (CH<sub>2</sub>)<sub>2</sub> units. Page 28 of 65

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- 86. (original) The polymer of claim 81 wherein the polymer has at least 15 mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 87. (original) The polymer of claim 8 wherein the polymer has at least 20 mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 88. (previously presented) A polymer comprising one or more C3 to C40 olefins, optionally one or more diolefins, and having between 1 and mole % of ethylene where the polymers has:
  - a) a Dot T-Peel of 1 Newton or more; and
  - b) a branching index (g') of 0.4 0.95 measured at the Mz of the polymer; and
  - wherein the polymer has at least 2 + X mol% (CH<sub>2</sub>)<sub>2</sub> units, where X is the mole % ethylene.
- 89. (original) The polymer of claim 88 wherein the polymer has at least 4 + X mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 90. (original) The polymer of claim 88 wherein the polymer has at least 6 + X mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 91. (original) The polymer of claim 88 wherein the polymer has at least 8 + X mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 92. (original) The polymer of claim 88 wherein the polymer has at least 10 + X mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 93. (original) The polymer of claim \$8 wherein the polymer has at least 15 + X mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 94. (original) The polymer of claim \$8 wherein the polymer has at least 20 + X mol% (CH<sub>2</sub>)<sub>2</sub> units.

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- 95. (previously presented) A polymir comprising one or more C3 to C40 olefins, optionally one or more diolefins, and less than 50 mole % of ethylene where the polymers has:
  - a) a Dot T-Peel of 5 Newton or more; and
  - b) a branching index (g') of 0/4 0/95 measured at the Mz of the polymer; and
  - c) an Mw of 100,000 or less
- 96. (original) The composition of claim 1 further comprising one or hydrocarbon resins selected from the group consisting of a liphatic hydrocarbon resins, aromatic modified aliphatic hydrocarbon resins, hydrogenated polycyclopentadiene resins, polycyclopentadiene resins, gum rosin esters, wood rosins, wood rosin esters, tall oil rosins, tall oil rosin esters, polyterpenes, aromatic modified polyterpenes, terpene phenolics aromatic modified hydrogenated polycyclopentadiene resins, hydrogenated aliphatic resin, hydrogenated aliphatic resin, hydrogenated rosin esters.
- 97. (original) The composition of claim 1 thrither comprising hydrocarbon resin present at 1 weight % to about 80 weight %
- 98. (original) The composition of claim 1 further comprising hydrocarbon resin present at 2 weight % to about 40 weight %
- 99. (original) The composition of claim 1 further comprising hydrocarbon resin present at 3 weight % to 30 weight %.
- 100. (original) The composition of claim 1 further comprising hydrocarbon resin present at 1 weight % to about 80 weight % selected from the group consisting of:

  C5/C6 terpene resins, styrene terpenes, alphamethyl styrene terpene resins, C9 terpene resins, aromatic modified C5/C6, aromatic modified cyclic resins, aromatic modified dicyclopentadiene based resins, resins obtained from the cationic polymerization of compositions containing one or more of the following monomers:

  C5 diolefins; C5 olefins; C6 olefins, C9 vinylaromatics; cyclics; and or terpenes; resins obtained by the thermal palymerization of dicyclopentadiene, and/or the

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thermal polymerization of dimers or oligomers of cyclopentadiene and /or methylcyclopentadiene, optionally with vinylaromatics.

- 101. (original) A composition comprising the polymer of claim 1 and having less than 5% hydrocarbon resin.
- 102. (original) A composition comprising the polymer of claim 1 and having less than 3% hydrocarbon resin.
- 103. (original) A composition comprising the polymer of claim 1 and having less than 1% hydrocarbon resin.
- 104. (previously presented) A polymer comprising one or more C3 to C40 olefins where the polymers has:
  - a) a Dot T-Peel between 1 and 10,000 Newtons; and
  - b) a branching index (g') of 0.4 0.95 measured at the Mz of the polymer; and
  - c) an Mw of 100,000 or les
- 105. (original) The polymer of claim 104 wherein the polymer has a Dot T-Peel of between 3 and 4000 Newtons.
- 106. (original) The polymer of claim 104 wherein the polymer has a Dot T-Peel of between 5 and 3000 Newtons.
- 107. (original) The polymer of claim 104 wherein the polymer has a Dot T-Peel of between 10 and 2000 Newtons.
- 108. (withdrawn) The process of claim 37 wherein the second catalyst component comprises one or more of:
  dimethylsiladiyl(2-methyl, 4-[3], 5-di-tbutylphenyl]indenyl)<sub>2</sub>zirconium dichloride;
  dimethylsiladiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)<sub>2</sub>zirconium dichloride;
  dimethylsiladiyl(2-n-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)<sub>2</sub>zirconium dichloride;
  dimethylsiladiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)<sub>2</sub>zirconium dichloride;
  dimethylsiladiyl(2-n-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)<sub>2</sub>zirconium dichloride;
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dimethylsiladiyl(2-iso-butyl, 4-[}[5'-di-tbuty|#henyl]indenyl)₂zirconium dichloride; dimethylsiladiyl(2-sec-butyl, 4-[3] 5'-di-tbuty| henyl]indenyl)22irconium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[3]5'-di-tbutylhhenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-methyl, 4-[3']5 di-thutylph nyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-di-tbuylphonyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-n-propyl, 4-[345'-di-tbuty|phenyl]indenyl) 2hafnium dimethylsiladiyl(2-iso-propyl, 4-[], 5'-di-tbuty|phenyl]indenyl) 2hafnium dichloride; dimethylsiladiyl(2-butyl, 4-[3',5]-di-tbutylphenyl]indenyl) hafnium dichloride; 9-silafluorendiyl(2-methyl, 4-[3], 4-di-thutylrlienyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-ethyl, 4-[3',5]-4i-tbutylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-n-propyl, 4-[3]5'-di-tbutylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-iso-propyl, 4-[b',5'-di-tbutylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-n-butyl, 4-[3], d-dbutylphenyl]indenyl)zzirconium dichloride; 9-silafluorendiyl(2-iso-butyl, 4-13,5'-di-tbutyhhenyl)indenyl)zirconium dichloride; 9-silafluorendiyl(2-sec-butyl, 4-13.5'-di-tbuty|phenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-tert-butyl, 4-[#',5'-di-tbutylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-methyl, 4-[3], di-thutyl | enyl] indenyl) hafnium dichloride; 9-silafluorendiyl(2-ethyl, 4-[3',5'-lii-tbutylphenyl]indenyl) 2hafnium dichloride; 9-silafluorendiyl(2-n-propyl, 4-13,5'-di-tbutyliphenyl) zhafnium dichloride; 9-silafluorendiyl(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-n-butyl, 4-[3] di-tbutyl menyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-iso-butyl, 4-[3,5'-d]-tbuty|phenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-sec-butyl, 4-[1],5'-di-tbuty|phenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-tert-butyl, 4-[],5'-di-tbuty|phenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-methyl, 4-[3], di-thutylyl enyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5] | i-tbutylphenyl]indenyl)zirconium dimethyl; dimethylsiladiyl(2-n-propyl, 4-[3] 5'-di-tbutylhenyl]indenyl)zirconium dimethyl; dimethylsiladiyl(2-iso-propyl, 4-[b',5'-di-tbulylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3], | di-tbutyl | dimethyl; | di-tbutyl | dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[3,5'-di-tbutyl]phenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[#.5'-dl-tbuty|phenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-[1/5'-di-tbutylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-methyl, 4-[3],#-di-thutylyllenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5'-li-tbutylphehyl]indenyl)2hafnium dimethyl; l'agc \$2 of 65

dimethylsiladiyl(2-n-propyl, 4-[3'|b'-di-buty|phenyl]indenyl)2hafnium dimethyl dimethylsiladiyl(2-iso-propyl, 4-[4',5'-di-tbuty]phenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3',4]-di-thutylphenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[3]5'-di|tbuty|thenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[3]5'-di|tbutyl|henyl]indenyl) zhafnium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-[3],5'-diltbutyl|henyl]indenyl) 2hafnium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3',\$-di-t-utylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5'-di-tbutylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[3][5'-di|tbuty||henyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4-[B',5'-di-tbut phenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3', | '-di-t|butyl| henyl]indenyl)₂zirconium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[3],5'-d|-tbuty||henyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-[1,5'-d]-tbuty|phenyl]indenyl)zirconium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-[1,5'-d-tbuty phenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3',5'-di-tbutylp) enyl]indenyl) 2hafnium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5'-li-tbutylphenyl]indenyl) 2hafnium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[3] 5'-ditbutyli henyl]indenyl) 2hafnium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4-\(\beta',5'-\)ti-tbut\(\psi\)lphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3', di-butylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[3,5'-d|-tbuty|phenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-scc-butyl, 4-[#',5'-d|-tbuty|phenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-[i]',5'-di-tbuty|phenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-methyl, 4-[3', 3-bis-trifluorpmethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-trifluoro nethylphenyl]indenyl)2zirconium dichloride: dimethylsiladiyl(2-n-propyl, 4-[3]5'-bis-triflus romethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-iso-propyl, 4-[b',5'-bis-tr-huoromethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-n-butyl, 4-[3', 1'-bis trifluoromethylphenyl]indenyl)2zirconium dichloride: dimethylsiladiyl(2-iso-butyl, 4-[3],5'-b|s-triflupromethylphenyl]indenyl)2zirconium dichloride; Page \$3 of 65

dimethylsiladiyl(2-sec-butyl, 4-[3||5'-bis-triflut romethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[3]5'-bis-triflu romethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-methyl, 4-[3',5] bis-trifluor methylphenyl]indenyl) 2hafnium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-his-trifluoromethylphenyl]indenyl) 2hafnium dichloride; dimethylsiladiyl(2-n-propyl, 4-[3\b'-bis-trifl\\)romethylphenyl]indenyl)2hafnium dichloride;  $dimethyl siladiyl (2-iso-propyl, 4-[] - [] - bis-trif [uoromethyl phenyl] indenyl)_2 hafnium$ dichloride; dimethylsiladiyl(2-n-butyl, 4-[3',4]-bis-trifluntomethylphenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-iso-butyl, 4-[3]5'-bis-trifluoromethylphenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-sec-butyl, 4-[3],5'-bis-triffforomethylphenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[3],5'-bis- tritlboromethylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-methyl, 4-[3', f'-bis-trifluo omethylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-his-trifluord nethylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-n-propyl, 4-[3],5'-bis-trifluoromethylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-iso-propyl, 4-1/3',5'-bis- trifluoromethylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-n-butyl, 4-[3']5'-bis-triflugromethylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-iso-butyl, 4-[1,5'-bis-trifluoromethylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-sec-butyl, 4-[],5'-bis-trif[noromethylphenyl]indenyl)2zirconium dichloride; Page 34 of 65

9-silafluorendiyl(2-tert-butyl, 4-[3],5'-bis- triflaoromethylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-methyl, 4-|3',\$|-bis-trifluorendiylphenyl) 2hafnium dichloride: 9-silafluorendiyl(2-ethyl, 4-[3',5'-his-trifluoromethylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-n-propyl, 4-[3||5'-bis-trif(woromethylphenyl)]indenyl)2 hafnium dichloride; hafnium dichloride; 9-silafluorendiyl(2-n-butyl, 4-[3', f'-bis-trifluo omethylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-iso-butyl, 4-[4],5'-bis-trifluorenethylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-sec-butyl, 4-[#,5'-bis-trif| oromethylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-tert-butyl, 4-[3',5'-bis-trift oromethylphenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-methyl, 4-[3',5]-bis-trifluorpmethylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5'-bis-trifluoromethylphenyl]indenyl)zirconium dimethyl;  $dimethyl siladiyl (2-n-propyl, 4-[3]5'-bis-triflupromethyl phenyl] indenyl)_2 zirconium$ dimethyl; dimethylsiladiyl(2-iso-propyl, 4-13',5'-bis-tri uoromethylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3', 1'-bis-trifluoromethylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[3,5'-bis-trifluoromethylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[1,5'-bis-trif] oromethylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-[],',5'-bis-triflaoromethylphenyl]indenyl)zirconium dimethyl; |Page 35 of 6<mark>5</mark>

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dimethylsiladiyl(2-methyl, 4-[3',5] bis-trifluor methylphenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5'-] s-trifluoromethylphenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-n-propyl, 4-[3]5'-bis-trift[promethylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-iso-propyl, 4-[],5'-bis-trifluoromethylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3', 5-bis-triflud omethylphenyl]indenyl)zhafnium dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[3||5'-bis-trif|uoromethylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[3],5'-bis-triff oromethylphenyl]indenyl)2hafnium dimethyl: dimethylsiladiyl(2-tert-butyl, 4-[3],5'-bis-triff oromethylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3', #'-bis-trifluo methylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5' is- trifluord nethylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[3],5'-bis- trith oromethylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4#3',5'-bis- thalluoromethylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3'|5'-bis-triff romethylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[#',5'-bis- trif 1 toromethylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-[], 5'-bis- trif uoromethylphenyl]indenyl)zirconium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-13',5'-bis-triffuoromethylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3] b'-bis-triflud comethylphenyl]indenyl) 2hafnium dimethyl: Page 36 of 6 VEMCC Printer (1640) 20 23/2002b (40/US/2002B) (40-272002B) (40-2-US-2005 DEC5-RFOA and RCE.DOC

9-silafluorendiyl(2-ethyl, 4-[3',5'|bis-trifluoro|nethylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[3,5'-bis-triff oromethylphenyl]indenyl)2 hafnium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4-13',5'-bis- tri luoromethylphenyl]indenyl)2 hafnium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3'\strifluorendiyl)2hafnium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[3,5'-bis-triff oromethylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-[1,5'-bis-trif] oromethylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-th,5'-bis-trift oromethylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5'-di-iso-propy phenyl)indenyl)2zirconium dichloride; dimethylsiladiyl(2-n-propyl, 4-[3] 5'-di-iso-propylphenyl]indenyl)2zirconium dichloride dichloride; dimethylsiladiyl(2-n-butyl, 4-[3',\bar{\pi}'-di-iso-propylphenyl]indenyl)zirconium dichloride; dimethylsiladiyl(2-iso-butyl, 4-[3],5'-di-iso-phpylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-sec-butyl, 4-[\$\\\\],5'-di-iso-\text{ppylphenyl}indenyl)2zirconium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[#,5'-di-iso-p opylphenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5' i-iso-propy phenyl]indenyl) hafnium dichloride; dimethylsiladiyl(2-n-propyl, 4-[3] 5'-di-iso-propylphenyl]indenyl) 2hafnium dichloride; dimethylsiladiyl(2-iso-propyl, 4-||3',5'-di-isd-propylphenyl]indenyl) 2hafnium dichloride; dimethylsiladiyl(2-n-butyl, 4-[3' di- iso-propylphenyl]indenyl) 2hafnium dichloride; Page 37 of 65

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dimethylsiladiyl(2-iso-butyl, 4-[1],5'-di-iso-propylphenyl]indenyl) 2hafnium
dichloride;
dimethylsiladiyl(2-sec-butyl, 4-[1,5'-di-iso-topylphenyl]indenyl) 2hafnium
dichloride;
dimethylsiladiyl(2-tert-butyl, 4-1111/5'-di-iso-pylphenyl]indenyl) 2hafnium
dichloride;
9-silafluorendiyl(2-ethyl, 4-[3',5] di-iso-propylphenyl]indenyl)zirconium dichloride;
9-silafluorendiyl(2-n-propyl, 4-[1],5'-di-iso-popylphenyl]indenyl)2zirconium
dichloride;
9-silafluorendiyl(2-iso-propyl, 4 13',5'-di-iso-propylphenyl]indenyl)2zirconium
dichloride:
9-silafluorendiyl(2-n-butyl, 4-[3]|| di-iso-prd ylphenyl]indenyl)2zirconium
dichloride;
9-silafluorendiyl(2-iso-butyl, 4-[[/,5'-di-iso-propylphenyl]indenyl)2zirconium
dichloride;
9-silafluorendiyl(2-sec-butyl, 4/11/15'-di-iso-dropylphenyl)indenyl)2zirconium
dichloride;
9-silafluorendiyl(2-tert-butyl, 4-4,5'-di-iso-q-opylphenyl)indenyl)2zirconium
dichloride:
9-silafluorendiyl(2-ethyl, 4-[3',5 li-iso-propulphenyl]indenyl) hafnium dichloride;
9-silafluorendiyl(2-n-propyl, 4-[],5'-di-iso-propylphenyl]indenyl)2hafnium
dichloride;
9-silafluorendiyl(2-iso-propyl, # 3',5'-di-iso-propylphenyl]indenyl)2hafnium
dichloride;
9-silafluorendiyl(2-n-butyl, 4-[3"b'-di-iso-propylphenyl]indenyl)2hafnium dichloride;
9-silafluorendiyl(2-iso-butyl, 4-[| 5'-di-iso-plopylphenyl]indenyl)2hafnium
dichloride;
9-silafluorendiyl(2-sec-butyl, 4-|||,5'-di-iso-propylphenyl]indenyl)hafnium
dichloride;
9-silafluorendiyl(2-tert-butyl, 4-4,5'-di-iso-h-opylphenyl]indenyl)2hafnium
dichloride;
dimethylsiladiyl(2-ethyl, 4-[3',5' i-iso-propy phenyl]indenyl)zirconium dimethyl;
dimethylsiladiyl(2-n-propyl, 4-[315'-di-iso-propylphenyl]indenyl)2zirconium dimethyl
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dimethylsiladiyl(2-iso-propyl, 4-13',5'-di-iso-tropylphenyl)indenyl)zirconium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3'|| '-di-iso-propylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-isobutyl, 4-[3][5'-di-iso-prophenyl]indenyl)zirconium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[[],5'-di-iso-plopylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-tert-butyl, 4/1/1/5'-di-iso-plopylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5' li-iso-propy phenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-n-propyl, 4-[3],5'-di- iso-propylphenyl]indenyl) hafnium dimethyl; dimethylsiladiyl(2-iso-propyl, 4 3',5'-di-isd-propylphenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3'] 'di- iso-pdpylphenyl]indenyl) 2hafnium dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[1,5'-di-iso-phpylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[],5'-di-iso-popylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-11/1,5'-di-iso-plopylphenyl)indenyl)zirconium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5||di-iso-prop||phenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[1],5'-di-iso-ppylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4 3',5'-di-iso-propylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3] b'-di-iso-probylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-iso-butyl,  $4\frac{1}{1}$ [],5'-di-iso-popylphenyl]indenyl)<sub>2</sub>zirconium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-15',5'-di-iso-propylphenyl)indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-18',5'-di-iso-n'opylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5 di-iso-propy phenyl]indenyl) 2hafnium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[s],5'-di-iso-ppylphenyl]indenyl)₂hafnium dimethyl; Page 39 of 65 1/20025140/US\20028140-2/2002B140-2-US-2005DHC4-RFOA and RCE.DDC

9-silafluorendiyl(2-iso-propyl, 4#[3',5'-di-iso-propylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3\$'-di-iso-propylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[4,5'-di-iso-propylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-4,5'-di-iso-popylphenyl)indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4-4,5'-di-iso-dopylphenyl)indenyl)2hafnium dimethyl; dimethylsiladiyl(2-methyl, 4-[3', -di-phenyl henyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-li-phenylphenyl)indenyl)2zirconium dichloride; dimethylsiladiyl(2-n-propyl, 4-[4]5'-di-phenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-iso-propyl, 4-13',5'-di-phenyl)indenyl)zirconium dichloride; dimethylsiladiyl(2-n-butyl, 4-[3',4'-di-phenyl, henyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-iso-butyl, 4-[\$,5'-di-phenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-sec-butyl, 4-[4,5'-di-phenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[4,5'-di-phenyl]indenyl)2zirconium dichloride; dimethylsiladiyl(2-methyl, 4-[3', di-phenyl henyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-ethyl, 4-[3',5'-(i-phenylphenyl)indenyl)2hafnium dichloride; dimethylsiladiyl(2-n-propyl, 4-[3,5'-di-phenyl]phenyl]indenyl);hafnium dichloride; dimethylsiladiyl(2-iso-propyl, 4-18',5'-di-phenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-n-butyl, 4-[3' di-phenyl henyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-iso-butyl, 4-[3,5'-di-phenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-sec-butyl, 4-[4,5'-di-phenyl]phenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-tert-butyl, 4-[4,5'-di-phenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-ethyl, 4-[3',5 li-phenylphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-n-propyl, 4-[4,5'-di-phed phenyl]indenyl)zirconium dichloride; 9-silafluorendiyl(2-iso-propyl, 4 3',5'-di-phe ylphenyl]indenyl)2zirconium dichloride: 9-silafluorendiyl(2-n-butyl, 4-[3] 'di-phenylhhenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-iso-butyl, 4-[14,5'-di-phenyl]phenyl]indenyl)zirconium dichloride; 9-silafluorendiyl(2-sec-butyl, 4- 4,5'-di-phenyl)phenyl]indenyl)zirconium dichloride; 9-silafluorendiyl(2-tert-buty!, 4-11/5'-di-pheth/lphenyl]indenyl)2zirconium dichloride; 9-silafluorendiyl(2-methyl, 4-[3'#'-di-pheny|#henyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-ethyl, 4-[3',5 di-phenylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-n-propyl, 4-[3,5'-di-phenyl]indenyl)2hafnium dichloride; Page 40 of 65

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9-silafluorendiyl(2-iso-propyl, 4 [3',5]-di-phehylphenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-n-butyl, 4-[3] di-pheny henyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-iso-butyl, 4-[[4]5'-ti-phenyl]indenyl)2hafnium dichloride; 9-silafluorendiyl(2-sec-butyl, 4-14,5'-di-phenyl)indenyl)indenyl)zhafnium dichloride; 9-silafluorendiyl(2-tert-butyl, 4-13,5'-di-phenyl]indenyl)2hafnium dichloride; dimethylsiladiyl(2-methyl, 4-[3',4'|di-phenyl henyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5' h-phenylphenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-n-propyl, 4-[\$\frac{1}{2}5'-\text{ci-phenylphenyl]indenyl}\_2zirconium dimethyl; dimethylsiladiyl(2-iso-propyl, 4 [5',5'|di-phetylphenyl]indenyl)zirconium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3] di-phenyl henyl]indenyl)zirconium dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[\$,5'-di-phenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[4,5'-di-phenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-[4];5'-di-phen phenyl]indenyl)2zirconium dimethyl; dimethylsiladiyl(2-methyl, 4-[3', -di-phenyl henyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-ethyl, 4-[3',5'||j-phenylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-n-propyl, 4-[315'-di-phenylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-iso-propyl, 4-15,5,4di-phetylphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-n-butyl, 4-[3' 4-di phenyl henyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-iso-butyl, 4-[\$5'-di-phenylphenyl]indenyl).hafnium dimethyl; dimethylsiladiyl(2-sec-butyl, 4-[4,5'-di-phen lphenyl]indenyl)2hafnium dimethyl; dimethylsiladiyl(2-tert-butyl, 4-[4,5'-di-phent]phenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3' di-pheny) henyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5] fii-phenylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-propyl, 4-[15'-di-phenyl]indenyl)2irconium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4 3',5 di-phe ylphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3|||-di-pheny||||henyl||indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-iso-butyl, 4-[1,5'-qi-phen lphenyl]indenyl)2zirconium dimethyl; 9-silafluorendiyl(2-sec-butyl, 4-18,5'-di-phenyl)indenyl)zirconium dimethyl; 9-silafluorendiyl(2-tert-butyl, 4- 1,5'-tli-phenyl)indenyl)zirconium dimethyl; 9-silafluorendiyl(2-methyl, 4-[3', f'-di-phenyl henyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-ethyl, 4-[3',5'| | -phenylphenyl)indenyl)hafnium dichloride; 9-silafluorendiyl(2-n-propyl, 4-[4]5'-di-phenylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-iso-propyl, 4 | 3',5' di-phe ylphenyl]indenyl)2hafnium dimethyl; 9-silafluorendiyl(2-n-butyl, 4-[3] di-phenyl henyl]indenyl)2hafnium dimethyl;

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9-silafluorendiyl(2-iso-butyl, 4-[4,5'-di-phen+lphenyl]indenyl)2hafnium dimethyl;
9-silafluorendiyl(2-sec-butyl, 4-4,5'-di-phenyl)phenyl]indenyl)hafnium dimethyl;
9-silafluorendiyl(2-tert-butyl, 4-4,5'-di-phenyl)phenyl]indenyl)2hafnium dimethyl;
dimethylsiladiyl(2-methyl, 4-[3', 1-di-thutylphenyl]indenyl) 1,4-diphenyl-1,3-
butadiene;
dimethylsiladiyl(2-ethyl, 4-[3',5' i-thutylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3-
butadiene;
dimethylsiladiyl(2-n-propyl, 4-[$\frac{1}{2}5'-\di-tbuty|\frac{1}{2}\linearyl]indenyl)2 \eta^4-1,4-\diphenyl-1,3-
butadiene;
dimethylsiladiyl(2-iso-propyl, 4-13',5'-di-tbut [phenyl]indenyl)2 n4-1,4-diphenyl-1,3-
butadiene;
dimethylsiladiyl(2-n-butyl, 4-[3] diftbutylphenyl]indenyl)2 n4-1,4-diphenyl-1,3-
butadiene;
dimethylsiladiyl(2-iso-butyl, 4-[3,5'-di-tbuty|) henyl]indenyl) 1,4-diphenyl-1,3-
butadiene;
dimethylsiladiyl(2-sec-butyl, 4-[4,5'-di-tbuty phonyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphonyl-1,3-
butadiene;
dimethylsiladiyl(2-tert-butyl, 4-12,5'-di-tbutylphenyl)indenyl), \eta^4-1,4-diphenyl-1,3-
butadiene:
dimethylsiladiyl(2-cthyl, 4-[3',5'] bis-trifluoromethylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-
1,3-butadiene;
dimethylsiladiyl(2-n-propyl, 4-[3]5'-his-triflupromethylphenyl]indenyl) 14-1,4-
diphenyl-1,3-butadiene;
dimethylsiladiyl(2-iso-propyl, 4-13',5' his- tri uoromethylphenyl]indenyl)2 n4-1,4-
diphenyl-1,3-butadiene;
dimethylsiladiyl(2-n-butyl, 4-[3]4-bis-trifluo omethylphenyl]indenyl)<sub>2</sub> \pi^4-1,4-
diphenyl-1,3-butadiene;
dimethylsiladiyl(2-iso-butyl, 4-[$,5'-bis-trif|\dipromethylphenyl]indenyl)<sub>2</sub> \(\eta^4-1,4-\)
diphenyl-1,3-butadiene;
dimethylsiladiyl(2-sec-butyl, 4-[4,5'-bis-triff oromethylphenyl]indenyl)<sub>2</sub> \eta^4-1,4-
diphenyl-1,3-butadiene;
dimethylsiladiyl(2-tert-butyl, 4-μ,5'-bis-trifμ oromethylphenyl)indenyl) η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
                                     Page 42 of 65
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dimethylsiladiyl(2-ethyl, 4-[3',5] li-iso-propy phenyl]indenyl)2 n<sup>4</sup>-1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-n-propyl, 4-[3,5'-di-iso-pippylphenyl]indenyl) η η -1,4-diphenyl-1,3-butadiene: dimethylsiladiyl(2-iso-propyl, 4 3',5 di-iso propylphenyl]indenyl) η<sup>4</sup>-1,4-diphenyl-1.3-butadiene: dimethylsiladiyl(2-n-butyl, 4-[3] '-di-iso-probylphenyl]indenyl) n<sup>4</sup>-1,4-diphenyl-1,3-butadiene; dimethylsiladiyl(2-iso-butyl, 4-[1,5'-di-iso-propylphenyl]indenyl) 1,4-diphenyl-1,3-butadiene; dimethylsiladiyl(2-sec-butyl, 4-4,5'-di-iso-propylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; dimethylsiladiyl(2-tert-butyl, 4-17,5'-di-iso-propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3-butadiene; dimethylsiladiyl(2-methyl, 4-[3'4'-di-phenyl henyl]indenyl) 1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-ethyl, 4-[3',5 hi-phenylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3butadiene: dimethylsiladiyl(2-n-propyl, 4-[\$,5'-di-phenyl]indenyl)2 \( \eta^4-1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-iso-propyl, 4-13',5'-di-phe ylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-n-butyl, 4-[3] dirphenyl henyl jindenyl) 1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-iso-butyl, 4-[4,5'-di-phenyl]indenyl)  $\eta^4$ -1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-sec-butyl, 4-4,5'-di-phenylphenyl)indenyl) n4-1,4-diphenyl-1,3butadiene; dimethylsiladiyl(2-tert-butyl, 4-4,5'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-methyl, 4-[3] '-di-thutylphenyl]indenyl) η<sup>4</sup>-1,4-diphenyl-1,3butadiene: Page 43 of 6

Attorney Docket No. 2002B140/2 9-silafluorendiyl(2-ethyl, 4-[3',5] di-thutylphanyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-n-propyl, 4-[0,5]di-tbuty phenyl]indenyl) 11<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-iso-propyl, 4 3',5'-di-tbutylphenyl)indenyl)2 n4-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-n-butyl, 4-[3] b'-di-tbutyl; henyl]indenyl) 1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-iso-butyl, 4-[1,5] di-tbuty phenyl]indenyl) n<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-sec-butyl, 4-4,5)-di-tbuty phenyl]indenyl) n<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-tert-butyl, 4-1,5-di-tbutylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-ethyl, 4-[3',5] bis-rifluore methylphenyl]indenyl) n<sup>4</sup>-1,4diphenyl-1,3-butadiene; 9-silafluorendiyl(2-n-propyl, 4-[1,5]-bis-trif) doromethylphenyl]indenyl) n<sup>4</sup>-1,4diphenyl-1,3-butadiene: 9-silafluorendiyl(2-iso-propyl, 4 3',5 -bis- tri luoromethylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; 9-silafluorendiyl(2-n-butyl, 4-[3]5'-his-triflud omethylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; 9-silafluorendiyl(2-iso-butyl, 4-[1,5]-bis-trifltoromethylphenyl]indenyl) 1,4diphenyl-1,3-butadiene; 9-silafluorendiyl(2-sec-butyl, 4-11,5 bis-trift boromethylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1.4diphenyl-1,3-butadiene; 9-silatluorendiyl(2-tert-butyl, 4-13/5) bis-trif(boromethylphenyl) indenyl) 1/4-1,4diphenyl-1,3-butadiene; 9-silatluorendiyl(2-ethyl, 4-[3',5 di-so-prop lphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3butadiene; 1,3-butadiene; Pag≓ 44 of 65

Attorney Docket No. 2002B140/2 9-silafluorendiyl(2-iso-propyl, 4, 3', 5'-di-iso-propylphenyl]indenyl) \( \eta^4 - 1, 4 - diphenyl-1,3-butadiene; 9-silafluorendiyl(2-n-butyl, 4-[3] b'-di-iso-propylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3-butadiene: 9-silafluorendiyl(2-iso-butyl, 4-4,5'-di-iso-propylphenyl)indenyl) n<sup>4</sup>-1,4-diphenyl-1,3-butadiene; 9-silafluorendiyl(2-sec-butyl, 4-11,5'-di-iso-propylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3-butadiene; 9-silafluorendiyl(2-tert-butyl, 4-15',5',di-iso-propylphenyl]indenyl) 1,4-diphenyl 1.3-butadiene: 9-silafluorendiyl(2-methyl, 4-[3] 5'-di-phenylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3butadiene: 9-silafluorendiyl(2-ethyl, 4-[3',5 di-phenylphenyl]indenyl)2 η<sup>4</sup>-1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-n-propyl, 4-[1,5'-di-phenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-iso-propyl, 4-3',5'-di-phenyl)indenyl) 1,4-1,4-diphenyl-1,3-9-silafluorendiyl(2-n-butyl, 4-[3] b'-di-phenyl)indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-iso-butyl, 4-11,5'-di-phen/lphenyl]indenyl)  $\eta^4$ -1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-sec-butyl, 4-1,5-di-phenylphenyl]indenyl)  $\eta^4$ -1,4-diphenyl-1,3butadiene; 9-silafluorendiyl(2-tert-butyl, 4-18',5'|di-phenylphenylphenylphenyl) n<sup>4</sup>-1,4-diphenyl-1,3butadiene: dimethylamidoborane(2-methyl, -[3,5'-di-thutylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-ethyl, 4 3',5'-di-tburylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-n-propy), 4-[3',5'-di-butylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-iso-pro 1, 4-[3',5'-d-tbutylphenyl]indenyl)2zirconium dichloride; Page 45 of 65

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Attorney Docket No. 2002B140/2 dimethylamidoborane(2-n-butyl #-[3],5'-di-t utylphenyl]indenyl)zirconium dichloride; dimethylamidoborane(2-iso-but), 4-[3',5'-diabutylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-sec-buty), 4-[3',5'-diltbutylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-tert-but 4, 4-[3',5'-di tbutylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-ethyl, 4#3',5"-bis-tri¶uoromethylphenyl]indenyl)₂zirconփım dichloride: dimethylamidoborane(2-n-propy 4-13',5'-bis trifluoromethylphenyl]indenyl)2 rconium di hloride; dimethylamidoborane(2-iso-propyl, 4-[3',5'-thstrifluoromethylphenyl]indenyl)2zirconium di hloride; dimethylamidoborane(2-n-butyl 4-[3],5'-bistrifluoromethylphenyl]indenyl)2#rconium di hloride; dimethylamidoborane(2-iso-buty, 4-[3',5'-bi trifluoromethylphenyl]indenyl)2 rconium di hloride; dimethylamidoborane(2-sec-but , 4-[3',5'-bi trifluoromethylphenyl]indenyl)2 rconium di hloride; dimethylamidoborane(2-tert-but), 4-[3',5'-bi]trifluoromethylphenyl]indenyl)2 rconium di hloride; dimethylamidoborane(2-ethyl, 44/3',5'-di-iso-propylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-n-propy, 4-[3',5'-di-so-propylphenyl]indenyl)2zirconium dichloride dimethylamidoborane(2-iso-propyl), 4-[3',5'-d-iso-propylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-n-butyl) 4-[3],5'-di-isp-propylphenyl]indenyl)zirconium dichloride; dimethylamidoborane(2-iso-buty), 4-[3',5'-di iso-propylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-sec-but 1, 4-[3',5'-di iso-propylphenyl]indenyl)2zirconium dichloride; Page 46 of 65 

dimethylamidoborane(2-tert-but), 4-[3',5'-diliso-propylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-methyl, 4-[3,5'-di-plenylphenyl]indenyl)zirconium dichloride; dimethylamidoborane(2-ethyl, 4 3',5'-di-phenyl)indenyl)zirconium dichloride; dimethylamidoborane(2-n-propy| 4-[3',\$'-di-phenylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-iso-proj.vl, 4-[3,5'-d-phenylphenyl]indenyl)zirconium dichloride; dichloride; dimethylamidoborane(2-iso-buty) 4-|3',5'-di-phenylphenyl]indenyl)zirconium dichloride; dimethylamidoborane(2-sec-buty); 4-[3',5'-di phenylphenyl]indenyl)2zirconium dichloride: dimethylamidoborane(2-tert-but | 4-[3', 5'-di phenylphenyl]indenyl)2zirconium dichloride; dimethylamidoborane(2-methyl, -[3\,5'-di-thutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; dimethylamidoborane(2-ethyl, 4, 3',5,-di-tbu vlphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3butadiene: dimethylamidoborane(2-n-propy 4-[3',3'-di-butylphenyl]indenyl)2 n4-1,4-diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-prom), 4-[3,5'-d-tbutylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-n-butyl, -[3],5' di-thutylphenyl]indenyl η -1,4-diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-buty), 4-[3',5'-di-butylphenyl]indenyl)2 \( \eta^4-1,4-diphenyl-1,3-butadiene:  $dimethylamidoborane (2-sec-but $\$\$; 4-[3', $'-di t butylphenyl] indenyl)_2 $\eta^4-1, 4-diphenyl-$ 1,3-butadiene;

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dimethylamidoborane(2-tert-butyl, 4-[3'5'-dil tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; dimethylamidoborane(2-ethyl, 4 [3',5'-b|s-tr| luoromethylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-n-propy, 4-3',5'-bi-trifluoromethylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene: dimethylamidoborane(2-iso-progyl, 4-[3,5'-ks-trifluoromethylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4-diphenyl-1,3-butadiene; dimethylamidoborane(2-n-buty) 4-[3,5] bis rifluoromethylphenyl]indenyl) 1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-buty), 4-[3',5'-bi-trifluoromethylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-sec-but 1, 4-[3' 5'-bis-trifluoromethylphenyl]indenyl)₂ η⁴-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-tert-but 1, 4-[3',5'-bit-trifluoromethylphenyl]indenyl)2 n4-1,4-diphenyl-1,3-butadiene; dimethylamidoborano(2-cthyl, 44/3',5'-di-isd propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3-butadiene: dimethylamidoborane(2-n-propyl, 4-[3',5'-dil so-propylphenyl]indenyl) 2  $\eta^4$ -1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-propyl, 4-[3,5'-4-iso-propylphenyl]indenyl) n<sup>4</sup>-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-n-butyl, 4-[3],5'|di-in-propylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-buty), 4-[3',5'-diaso-propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-sec-butyl, 4-[3',5'-di iso-propylphenyl]indenyl)2 n4-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-tert-butyl, 4-[3',5'-diliso-propylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-methyl, 4-[3,5'-di-pi enylphenyl]indenyl)2 \( \eta^4-1,4-diphenyl-1,3-butadiene; Page 48 of 65

dimethylamidoborane(2-ethyl, 4 [3',5]-d)-phenylp butadiene; dimethylamidoborane(2-n-propy), 4-[3',5'-diphenylphenyl]indenyl)2 \( \eta^4-1,4-\) diphenyl-1,3-butadiene; dimethylamidoborane(2-iso-propyl, 4-[3',5'-4-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-n-butyl, 4-[3],5 di-phenylphenyl]indenyl)2 n<sup>4</sup>-1,4-diphenyl-1,3-butadiene: dimethylamidoborane(2-iso-butyl, 4-[3',5'-d] phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene: dimethylamidoborane(2-sec-butyl, 4-3',5'-diphenylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; dimethylamidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphonyl-1,3-butadiene; dimethylamidoborane(2-methyl, 4-[3,51/di-thattylphenyl]indenyl)2 zirconium dimethyl; dimethylamidoborane(2-ethyl, 4-[3',5]-d|-tbu ylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-n-propy), 4-[3',5'-di-butylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-iso-propyl, 4-[3],5'-th-tbutylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-n-butyl, 4-[3],5'-di-thutylphenyl]indenyl)2zirconium dimethyl: dimethylamidoborane(2-iso-butyl, 4-[3',5'-d] butylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-sec-butyl, 4-3',5'-di tbutylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-tert-butyl, 4-[3',5'-di tbutylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-ethyl, 4-[3',5]-bis-tri luoromethylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-n-propy), 4-[3',5'-bis trifluoromethylphenyl]indenyl)2zirconium di nethyl; Page 49 of 65

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Attorney Docket No. 2002B140/2 dimethylamidoborane(2-iso-propyl, 4-[3],5'-listrifluoromethylphenyl]indenyl)2zirconium dinethyl; dimethylamidoborane(2-n-butyl, 4-[3],5'-bistrifluoromethylphenyl]indenyl)2zirconium dinethyl; dimethylamidoborane(2-iso-butyl, 4-13',5'-bi trifluoromethylphenyl]indenyl)2zirconium dinethyl; dimethylamidoborane(2-sec-butyl, 4-3',5'-b) trifluoromethylphenyl]indenyl)2zirconium dinethyl; dimethylamidoborane(2-tert-butyl, 4-[3',5'-bi] trifluoromethylphenyl]indenyl)2zirconium dinethyl; dimethylamidoborane(2-ethyl, 4-[3',5'-di-isq-propylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-u-propy), 4-[3',5'-di-so-propylphenyl]indenyl)2zirconium dimethyl dimethylamidoborane(2-iso-propy), 4-[3],5'-t -iso-propylphenyl]indenyl)2zirconium dimethyl: dimethylamidoborane(2-n-butyl, 4-[3],5'-di-4-propylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-iso-buty], 4-[3',5'-diso-propylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-sec-butyl, 4-[3']5'-diliso-propylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-tert-butyl, 4-[3'[5'-diffiso-propylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-methyl, 4-[3\5'\di-p\enylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-ethyl, 4,[3',5]-d|-phehylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-n-propy), 4-[3',5'-di| henylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-iso-propyl, 4-[3,5'-d-phenylphenyl]indenyl)2zirconium dimethyl: dimethylamidoborane(2-n-butyl, 4-[3],5'-di-penylphenyl]indenyl)2zirconium dimethyl; Page 50 of 65

dimethylamidoborane(2-iso-butyl, 4-[3',5'-d] henylphenyl]indenyl)zirconium dimethyl; dimethylamidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dimethyl; dimethylamidoborane(2-tert-butyl, 4-[3']5'-diphenylphenyl]indenyl)zirconium dimethyl; diisopropylamidoborane(2-methyl, 4-[3',5'-di tbutylphenyl]indenyl)zirconium dichloride: diisopropylamidoborane(2-ethyl 4-[3],5]-di-butylphenyl]indenyl)2zirconium dichloride: diisopropylamidoborane(2-n-propyl, #-[\beta',5'+\beta'-tbutylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-iso-propyl, 4-[3',5-di-tbutylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-n-butyl, 4\[3\[5'-d\]-tbutylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-iso-butyl, 4-[3',5] li-tbutylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-sec-butyl, 4-[3',5] di-tbutylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-tert-butyl, 4-[3',5] di-tbutylphenyl]indenyl)zirconium dichloride; diisopropylamidoborane(2-ethyl, 4-[3,5]-bis trifluoromethylphenyl]indenyl)2zirconium diahloride; diisopropylamidoborane(2-n-propyl, #-[B',5'] istrifluoromethylphenyl]indenyl)2zircomium di hloride; diisopropylamidoborane(2-iso-propyl, 4+[3',5]-bistrifluoromethylphenyl]indenyl)2zirconium dlahloride; diisopropylamidoborane(2-n-butyl, 4-[3],5'-b|strifluoromethylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-iso-bhtyl, 4-3',5|bistrifluoromethylphenyl]indenyl)22irconium didhloride; diisopropylamidoborane(2-sec-butyl, 4-13',5 bistrifluoromethylphenyl]indenyl)22ircomium dichloride; Page 51 of 65

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Attorney Docket No. 2002B140/2 diisopropylamidoborane(2-tert-buty!, 4-13',5 bistrifluoromethylphenyl]indenyl)2/irconium didnloride; diisopropylamidoborane(2-ethyl 4-[3],5'-di-i-propylphenyl]indenyl)zirconium dichloride; diisopropylamidoborane(2-n-propyl, 4-[3',5'-aiso-propylphenyl]indenyl)zzirconium dichloride diisopropylamidoborane(2-iso-p|opyl, 4-[3',5-di-isopropylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-n-but|1, 4|[3|5'-daiso-propylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-iso-b|ttyl, #-[β',5'-ti-|so-propylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-sec-butyl, 4-[3',5] di-iso-propylphenyl]indenyl)zirconium dichloride; diisopropylamidoborane(2-tert-hutyl, 4-[3',5] di-iso-propylphenyl]indenyl)2zirconium dichloride: diisopropylamidoborane(2-methyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-ethyl 4-[3,5]-di-thenylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-n-propyl, 4/[3',5'4]i-phenylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-iso-plopyl 4-[3',5]-di-phenylphenyl]indenyl)zirconium dichloride; diisopropylamidoborane(2-n-but)1, 4 [3,5'-d phenylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-iso-b) tyl, 4-[3',5'-1i-phenylphenyl]indenyl)2zirconium dichloride; diisopropylamidoborane(2-sec-butyl, 4-13',5 li-phenylphenyl]indenyl)zírconium dichloride; diisopropylamidoborane(2-tert-tutyl, 4-[3',5] di-phenylphenyl]indenyl)2zirconium dichloride; Page \$2 of 65

diisopropylamidoboranc(2-methyl, 4-[3',5'-ditbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-ethyl, 4-[3',5'-di-t-utylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1.3-butadiene: diisopropylamidoborane(2-n-propyl, 4-[3',5'-ai-thutylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-propyl, 4-[3', 5'-di-tbutylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-n-butyl, 4-[3',5'-d-tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-butyl, 4-[3',5] di-butylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-sec-butyl, |4-|3',5| di-tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-tert-butyl, 4-[3',5] di-tbutylphenyl [indenyl] n<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-ethyl, 4-[3',5'-bis-rifluoromethylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-n-propyl, 11/3',5' sis trifluoromethylphenyl]indenyl)₂ η⁴-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-propyl, 4-[3',5-bis-trifluoromethylphenyl]indenyl)2 η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-n-butyl, 4+[3',5'-b]s-trifluoromethylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-butyl, 4-[3',5] bis trifluoromethylphenyl]indenyl)2 n4-1,4-diphenyl-1,3-butadiene: diisopropylamidoborane(2-sec-butyl, 4-[3',5] bis-trifluoromethylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-tert-butyl, 4-[3',5] bis-trifluoromethylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene: diisopropylamidoborane(2-ethyl, 4-[3,5'-di-lao-propylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene;

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diisopropylamidoborane(2-n-propyl, 4-[3',5'+1i-iso-propylphenyl]indenyl) 2 n<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-propyll, 4-[3',5]-di-iso-propylphenyl]indenyl) n<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-n-butyl, 4-[3],5'-d-iiso-propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-butyl, 4-[3',5'-li-so-propylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-sec-butyl, 4-[3',5] di-iso-propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene: diisopropylamidoborane(2-tert-butyl, 4-[3',5] di-iso-propylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-methyl, 4-[3],5'-dii phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-ethyl, 4-[3],5|-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene; diisopropylamidoborane(2-n-propyl, 4-[3',5'] i-phenylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-iso-propyl, 4-[3',5]-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-n-bulyl, 4-[3],5'-d-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene, diisopropylamidoborane(2-iso-butyl, 4-[3',5]-lii-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-sec-butyl, 4-[3',5] di-phenylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-tert-butyl, 4-[3',5] di-phenylphenyl]indenyl)2 n4-1,4diphenyl-1,3-butadiene; diisopropylamidoborane(2-methyl, 4-13,5'-dil tbutylphenyl]indenyl)2zirconium dimethyl: diisopropylamidoborane(2-ethyl, 4-[3],5]..di-tutylphenyl]indenyl)zirconium dimethyl; Page 54 of 65

Attorney Docket No. 2002B140/2 diisopropylamidoborane(2-n-propyl, 4-[3',5'-li-|butylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-iso-propyl, 4-[3', 3-d[-tbutylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-n-butyl, 4-[3',5'-d-tbutylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-iso-butyl, 4-[3',5'+li-butylphenyl]indenyl)zirconium dimethyl; diisopropylamidoborane(2-sec-butyl, 4-[3',5] di-tbutylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-tert|butyl, |4-[3',5] di-tbutylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-ethyl, 4-[3],5'-bistrifluoromethylphenyl]indenyl]zirconium di nethyl; diisopropylamidoborane(2-n-propyl, 4-[3',5'+bis trifluoromethylphenyl]indenyl]2zirconium dinethyl; diisopropylamidoborane(2-iso-propyl, 4-[3',5]-b|strifluoromethylphenyl]indenyl]zirconium dinethyl; diisopropylamidoborane(2-n-butyl, 4-[3',5'-b] trifluoromethylphenyl]indenyl)2zirconium dinethyl; diisopropylamidoborane(2-iso-butyl, 4-[3',5] bistrifluoromethylphenyl]indenyl)2zirconium dinethyl; diisopropylamidoborane(2-sec-butyl, 4-[3',5] bistrifluoromethylphenyl]indenyl]zirconium dinethyl; diisopropylamidoborane(2-tert-butyl, 4-[3',5] bistrifluoromethylphenyl]indenyl)2zirconium dine(hyl; diisopropylamidoborane(2-ethyl, 4-[3],5'-di-lo-propylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-n-propyl, 4-[3',5'+1-iso-propylphenyl]indenyl)2zirconium dimethyl diisopropylamidoborane(2-iso-propyl, 4-[3',5-di-isopropylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-n-butyl, 4 [3',5'-d-isb-propylphenyl]indenyl)2zirconium dimethyl; Page 55 of 65 025140/US\29928140-2\2002B140-3-UB-2005DECS-RFOA worl RCR.DOC

diisopropylamidoborane(2-iso-butyl, 4-[3',5'-li-iso-propylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-sec-butyl, 4-[3',5] li-iso-propylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-tert-butyl, 4-[3',5] di-iso-propylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-methyl, 4-[3\5'-diphenylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-ethyl, 4-[3,5]-di-phenyl]indenyl)<sub>2</sub>zirconium dimethyl; diisopropylamidoborane(2-n-propyl, 4-[3',5'+1-phenylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-iso-propyl, 4 [3',5 di-phenylphenyl]indenyl)zirconium dimethyl; diisopropylamidoborane(2-n-butyl, 4-[3],5'-d-phenylphenyl]indenyl)2zirconium dimethyl: diisopropylamidoborane(2-iso-butyl, #-[3',5'+li-phenylphenyl]indenyl)2zirconium dimethyl; diisopropylamidoborane(2-sec-butyl, 4-[3',5|4li-phenylphenyl]indenyl)₂zirconium dimethyl; diisopropylamidoborane(2-tert-butyl, 4-[3',5] di-phenylphenyl]indenyl)2zirconium dimethyl; bis(trimethylsilyl)amidoborane(2-methyl, 4-[1,5'-di-tbutylphenyl]indenyl)2zirconium dichloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] b'-di-tbutylphenyl]indenyl)2zirconium dichloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-ditbutylphenyl]indenyl)\_zirconium dichloride; bis(trimethylsilyl)amidoborane(2-iso-propyll 4-[3',5'-ditbutylphenyl]indenyl)zirconium dichloride; dichloride; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 [3],5'-ditbutylphenyl]indenyl)2zirconium dichloride; Page 56 of 65 L'Mpc/LAW\Prosecution\@MC:C Prps HIGH LED TO 2012 H | 40/LUS | 2002 B | 40-2/2002 B | 40-2-US-2005 DECIS-REFOA and RICH, DOC

bis(trimethylsilyl)amidoborane(2-sec|butyl, 4 -13'.5'-ditbutylphenyl]indenyl)2zirconium dichloride; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4/3',5'-ditbutylphenyl]indenyl)2zirconium dichloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] b'-bistrifluoromethylphenyl]indenyl)2zirconjum dialloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4 131.5'-bistrifluoromethylphenyl]indenyl)zirconjum dialiloride; bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-bistrifluoromethylphenyl]indenyl)zzirconjum dilhloride; bis(trimethylsilyl)amidoborane(2-n-butyl, 4-3'.5'-bistrifluoromethylphenyl]indenyl)2zirconjum dialloride; bis(trimethylsilyl)amidoborane(2-iso-butyl, (3',5'-bistrifluoromethylphenyl]indenyl)2zirconjum diahloride; bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-13',5'-bistrifluoromethylphenyllindenyl)zircohlum di bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-1/3',5'-bistrifluoromethylphenyllindenyl)zircohjum di hloride; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] propylphenyllindenyl)2zirconium dichloridel bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3],5'-di-isopropylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-13',5'-di-isopropylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-n-butyl, 4-B',5'-di-isopropylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 (3',5'-di-isopropylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-sec|butyl, 4[3',5'-di-isopropylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-tert|butyl, 4-[3',5'-di-isopropylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-methyl, 4-15/5'-di-phenylphenyl]indenyl)2zirconium dichloride;

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17. Rpd1. AWP ms continuit EMCC | Prosecution 1 2 2002 b 1-00 LS 2002 B 1-00 - 2-US-2005 DECS-RFOA and RCE.DOC

bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] 5'-di-phenylphenyl]indenyl)2irconium dichloride; bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-diphenylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-n-butyl, 4-13',5'-diphenylphenyl lindenyl) zirconium dichloride bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 [3],5'-diphenylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dichloride bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dichloride; bis(trimethylsilyl)amidoborane(2-methyl, 4-13',5'-di-tbutylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] 5'-di-tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-di-tbutylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene: bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-di-tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-n-butyl, 4/B',5'-di-tbutylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 [3,5'-di-tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-sec-butyl, [3',5'-di-tbutylphenyl]indenyl)<sub>2</sub>  $\eta^4$ -1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-tbutylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4diphenyl-1,3-butadiene; bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] 5'-bis-trifluoromethylphenyl]indenyl)2 η<sup>4</sup>-1,4-diphenyl-1,3-butadiene;

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1:Wpe/LAW/Prosecution/EMCC Prosecution/3( 2/2002):140/(15/2002):140-2/2002):140-2-US-2005():ECS-RFOA and RCC.DOC

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bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3],5'-bis-
trifluoromethylphenyl]indenyl)<sub>2</sub> \eta^4-1,4-diphenyl 1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-[3',5'-bis-
trifluoromethylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-n-butyl, 4-||$',$'-bis-trifluoromethylphenyl]indenyl)2
η<sup>4</sup>-1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-iso-butyl, #[3],5'-bis-
trifluoromethylphenyl]indenyl)<sub>2</sub> \eta^4-1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-bis-
trifluoromethylphenyl]indenyl)<sub>2</sub> \eta^4-1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-bis-
trifluoromethylphenyl]indenyl)<sub>2</sub> \eta^4-1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3||5'-di-iso-propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3],5'-di-iso-propylphenyl]indenyl) 2 114-
1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-\(\frac{1}{3}\)',5'-di-iso-propylphenyl\(\frac{1}{3}\)indenyl\) \(\eta^4\)
1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-n-butyl, 4-||β',5'-di-iso-propylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-
1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-iso-butyl, 4-[3',5'-di-iso-propylphenyl)indenyl)<sub>2</sub> η<sup>4</sup>-
1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-
1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-iso-propylphenyl]indenyl)<sub>2</sub> n<sup>4</sup>-
1.4-diphenyl-1.3-butadiene:
bis(trimethylsilyl)amidoborane(2-methyl, 4-13,5'-di-phenylphenyl]indenyl)2 1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] 5'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
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bis(trimethylsilyl)amidoborane(2-iso-pr)pyl [4-[3',5'-di-phenyl] indenyl)<sub>2</sub> \eta^4-
1,4-diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-n-buty'l, 4-||b',$'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 [3], 5'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-sec-butyl, 4[3',5'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-phenylphenyl]indenyl)<sub>2</sub> η<sup>4</sup>-1,4-
diphenyl-1,3-butadiene;
bis(trimethylsilyl)amidoborane(2-methyl, 4-[b,5'-di-tbutylphenyl]indenyl)2zirconium
dimethyl;
bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3/b]-di-tbutylphenyl]indenyl)2zirconium
dimethyl;
bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-di-
tbutylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-iso-propyl 4-[3',5'-di-
tbutylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyI)amidoborane(2-n-butyl, 4-||b',5'-di-tbutylphenyl]indenyl)2zirconium
dimethyl;
bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 [3,5'-di-
tbutylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-
tbutylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-
tbutylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] 5'-bis-
trifluoromethylphenyl]indenyl)2zirconium dinethyl;
bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-bis-
trifluoromethylphenyl]indenyl)2zirconium dinethyl;
bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-13',5'-bis-
trifluoromethylphenyl]indenyl)2zirconium dimethyl;
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1/Bpc/I-AW/Prosecution/EMCC Projecution/2012/2012b140/US/2012B140-2/2002B140-2-US-2005DEC5-RFOA and RCE.DOC

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bis(trimethylsilyl)amidoborane(2-n-butyl, 4-1113',5'-bis-
trifluoromethylphenyl]indenyl)zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-iso-butyl, 4 [3,5'-bis-
trifluoromethylphenyl]indenyl)2zirconium dinethyl;
bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-bis-
trifluoromethylphenyl]indenyl)2zirconium dinethyl;
bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-bis-
trifluoromethylphenyl]indenyl)2zirconium dinethyl;
bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] 5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-n-propyl, 44[3],5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl
bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-13',5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-n-butyl, 4-18',5'-di-iso-
propylphenyl | indenyl | zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-iso-butyl, #[3],5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-tert-butyl, 4-[3',5'-di-iso-
propylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-methyl, 4-[b',5'-di-phenylphenyl]indenyl)2zirconium
dimethyl;
bis(trimethylsilyl)amidoborane(2-ethyl, 4-[3] [5'-di-phenylphenyl]indenyl)2zirconium
dimethyl;
bis(trimethylsilyl)amidoborane(2-n-propyl, 4 [3,5'-di-
phenylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-iso-propyl, 4-13',5'-di-
phenylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-n-butyl, 4-113',5'-di-
phenylphenyl]indenyl)2zirconium dimethyl;
bis(trimethylsilyl)amidoborane(2-iso-butyl, 4[3,5'-di-
phenylphenyl]indenyl)2zirconium dimethyl;
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bis(trimethylsilyl)amidoborane(2-sec-butyl, 4-[3',5'-diphenylphenyl]indenyl)2zirconium dimethyl; 4-[3',5'-diphenylphenyl]indenyl)2zirconium dimethyl.

- 109. (previously presented) A polymer comprising one or more C3 to C40 olefins and less than 1 mole % of ethylene where the polymer has:
  - a) a Dot T-Peel of 1 Newton or more; and
  - b) a branching index (g') of 0.4 0.95 m aspred at the Mz of the polymer; and
  - c) an Mw of 100,000 or less; and the polymer has an amorphous compenent which contains at least 3 mol% (CH<sub>2</sub>)<sub>2</sub> units.
- 110. (original) The polymer of claim 109 where the amorphous component contains at least 6 mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 111. (original) The polymer of claim 109 where the amorphous component contains at least 10 mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 112. (original) The polymer of claim 109 where the amorphous component contains at least 15 mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 113. (original) The polymer of claim 109 where the amorphous component contains at least 20 mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 114. (previously presented) A polymer comprising one or more C3 to C40 olefins and between 1 and 5 mole % of ethylene where the polymer has:
  - a) a Dot T-Peel of 1 Newton or more; and
  - b) a branching index (g') of 0.4 0.95 m as ured at the Mz of the polymer; and
  - c) an Mw of 100,000 or less; and the polymer has an amorphous component which contains at least 3 + X mol% (CH<sub>2</sub>)<sub>2</sub> units, where X is the mol % et tylene in the polymer.

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- 115. (original) The polymer of claim 114 where the amorphous component contains at least 6 + X mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 116. (original) The polymer of claim 114 where the amorphous component contains at least 10 + X mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 117. (original) The polymer of claim 114 where the amorphous component contains at least 15 + X mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 118. (original) The polymer of claim 114 where the amorphous component contains at least 20 + X mol % (CH<sub>2</sub>)<sub>2</sub> units.
- 119. (new) A polymer comprising at least 50 moles of one or more C<sub>3</sub> to C<sub>40</sub> olefins where the polymers has:
  - a) a Dot T-Peel of 1 Newton or more on Kraft paper;
  - b) an Mw of 10,000 to 100,000; and
  - a branching index (g') of 0.4 0.98 measured at the Mz of the polymer when the polymer has an Mw of 10,000 to 60,000, or
  - a branching index (g') of 0.4 0.95 m asured at the Mz of the polymer when the polymer has an Mw of 10,000 to 80,000.

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